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Anthrax Attacks, Biological Terrorism and Preventive Responses

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ANTHRAX ATTACKS, BIOLOGICAL TERRORISM AND PREVENTIVE RESPONSES

Testimony of John Parachini

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Before the Subcommittee on Technology, Terrorism, and Government Information

November 6, 2001

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Anthrax Attacks, Biological Terrorism and Preventive Responses

Statement of John Parachini

Policy Analyst

RAND Washington Office

Thank you, Madam Chair, for the privilege and opportunity to testify before the Subcommittee on Technology, Terrorism and Government Information. Information about the quality of the anthrax used in the letter sent to Senator Daschle indicates a potentially significant paradigm shift in the scope and magnitude of the bioterrorism threat. My remarks will focus on the potential perpetrator of the recent anthrax attacks. Examining who is behind these attacks provides a current case study to review the threat of bioterrorism. In my opinion, bioterrorism includes any organization, even a state, or individual who seeks to terrorize, incapacitate or kill with disease and biological material. In conclusion, I will review some preventive measures that aim to diminish the proliferation of biological agents to states and terrorists.

The sophisticated quality of the Anthrax used in the letter sent to Senator Daschle suggests that the bioterrorism threat has reached a new level previously viewed by many analysts, myself included, as possible, but unlikely. At the moment, this new level of threat is manageable, but we must take into account the profound implications of this shift if we are to devise effective preventive and protective policies.

There are at least three possible explanations for the origins of the sophisticated Anthrax contained in the letter sent to Senator Daschle; all of them have heretofore been considered possible, but unlikely. First, these attacks could be the clandestine act of a state either rolling towards wider conflict or secretly inflicting harm because it believes it can do so without detection and attribution. Second, a state could have engaged a

terrorist group to conduct the attack or provided the material to a sub-national entity for its own purposes. Third, a terrorist group or individual could have produced this sophisticated quality of anthrax itself or received assistance from scientists willing to sell their expertise. All of these three explanations represent a break with the historical precedents.

The historical data set of biological weapons use by states or terrorists, covertly or overtly, is very limited.[1] Given our potential vulnerabilities, it is a small wonder that states and terrorists have not used disease more often. Understanding why the use of biological weapons has been so infrequent may constructively focus our examination of the current anthrax attacks on measures to reduce the possibility of other attacks in the future.

STATE PERPETRATED BIOTERRORISM

When it comes to the feasibility of using biological weapons, states are most likely to have the resources, technical capabilities, and organizational capacity to assemble the people, know-how, material, and equipment to produce such weapons and to be able to clandestinely deliver them to valued targets. Mustering the resources and capabilities to inflict a devastating blow with biological agents has proven to be a formidable task even for states.

The quality of the anthrax sent to the U.S. Senate reportedly has characteristics generally associated with state biological weapons programs. Clandestine use of a biological agent by a state against the United States has traditionally been viewed as highly unlikely. Fear of devastating retaliation is generally believed to deter states from conducting such attacks. Retaliation would potentially be devastating because some uses of some biological agents can serve as strategic weapons. For example, wide dispersal of

[1] For an insightful discussion of the history of weapons of mass destruction and their use by states and terrorists see, David Rapoport, "Terrorism and Weapons of the Apocalypse," *National Security Studies Quarterly*, Vol. V, No. 3, (Summer).

anthrax that could be aerosolized or strategic distribution of an infectious agent such as smallpox or plague could produce significant casualties and greatly disrupt life in America. Conventional wisdom is that states might use a biological weapon like anthrax as a weapon, but only as a last resort.

The United States and the former Soviet Union dedicated considerable national defense resources to their biological weapons programs, and both countries encountered significant difficulties along the way. Iraq also dedicated considerable resources to its biological weapons program; although Iraq's effort was more successful than most experts imagined possible, it still encountered a number of significant challenges. A state's ability to command resources and organize them for certain priority scientific and industrial objectives presents the potential for the greatest threat of bioterrorism. Given advances in biological sciences and the plethora of information made public about biological weapons in the last five years, other countries may have learned how to produce Anthrax with sophisticated properties.

However, there are three circumstances when a state might clandestinely wage biological terrorism. First, a state struggling for its existence might be willing to use biological weapons clandestinely as a means to forestall or to prevent imminent defeat. There is no historical example of a state responding with a biological weapon in a moment of desperate struggle for its existence, but it is conceivable.

While the Taliban government of Afghanistan might be an example of a government in danger of being eliminated, the anthrax attacks started before the United States commenced military operations. Even the logic that a desperate government such as the Taliban or Iraq's Saddam Hussein might lash out against the United States as a desperate move seems improbable. The best the clandestine state attacker could hope for would be to inflict a large number of casualties and to avoid discovery. A successful state biological weapons strike, clandestinely delivered against the United States, might cause many casualties, but it would not lead to the end of the American form of

government or ensure the conquest of American territory. Short of a barrage attack of ballistic missiles, the U.S.'s ability to reconstitute itself remains robust. Even a significant clandestine biological strike on a major city would not topple the system of government in the United States. Thus, the inherent limits of hiding a significant attack constrain the realm of the possible.

Second, if a state felt it could attack with biological weapons and be undetected, it might do so. In the twentieth century, there are only two significant examples of states using biological agents clandestinely except during times of war. For example, in the First World War, Germany sought to disrupt allied logistical capabilities by infecting horses with glanders.[2] The other case involves Japanese use of biological agents during its occupation of China. Only during wartime have states conducted indiscriminate attacks with biological weapons. In the few instances, the attacked state did not have the ability to respond with devastating force. Given the long and powerful reach of modern states, it is hard to imagine a state risking the political and military consequences of discovery.

A third situation when a state might engage in biological terrorism would be if it attacked its own citizens. In the 1980s, both the Bulgarian and the South African governments used biological materials to kill domestic political opponents. South Africa had a significant clandestine chemical and biological program that supported a major effort against regime opponents. Little is known about the Bulgarian program, but government operatives are believed to have assassinated a Bulgarian dissident in London with the toxin ricin, which they received from the Soviet KGB. Both of these cases entailed discriminate uses of biological weapons. Aside from state assassinations of regime opponents, states have been extremely reluctant to use biological weapons.

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[2] Mark Wheelis, "Biological sabotage in World War I," in *Biological and Toxin Weapons: Research, Development and Use from the Middle Ages to 1945*, Edited by Erhard Geissler and John Ellis van Courtland Moon, SIPRI Chemical & Biological Warfare Studies No. 18, (Oxford, UK: Oxford University Press), pp. 35-61.

If the current anthrax attacks are the work of a state, this suggests that states might use biological weapons for non-strategic purposes. That is, the current anthrax attacks could be the work of a state that wished to inflict revenge on the United States. The state would not seek to conquer the territory of the United States or end the American system of government. The Iraqi government is one that comes readily to mind as a state that might have this motive. The United States defeated Iraq in military battle and killed many of its military personnel and civilians. But this is a theoretical explanation. Yet, at the moment, there is no evidence positively linking Iraq to the spate of attacks.

Other than the quality of the anthrax sent to the U.S. Senate and inferences one might draw about grievances other states hold against the United States, there is no evidence at the moment that a state is the perpetrator. It is imaginable that we are at the start of a war and another state is clandestinely attacking with anthrax as a diversion. Similarly, it is imaginable that the state perpetrating these attacks is willing to take great risks. And finally, it is imaginable, that a state is attacking the United States with anthrax as a trial to see how we respond. All of these scenarios are possible, but there is no evidence supporting them at the moment. Until additional evidence becomes available, state conduct of these attacks is highly unlikely.

While states can amass the resources and capabilities to wage biological terrorism, considerable disincentives keep them from doing so. A state that undertakes a clandestine attack using biological weapons risks the prospect of the attack being traced back to them. The response to an attack with biological weapons could be devastating, which gives states reason for caution.

STATE ASSISTANCE TO SUB-NATIONAL ENTITY

An alternative possibility is that a state has provided this sophisticated anthrax to a terrorist group. The terrorist group is either serving as a surrogate for a state or a state is transferring biological weapons to a terrorist group for its own purposes. Both

possibilities have heretofore been viewed as unlikely.

There are no widely agreed upon historical examples in the open source literature of states providing sub-national groups with biological weapons for overt or covert use. Money, arms, logistical support, training, and even training on how to operate in a chemically contaminated environment are all forms of assistance states have provided to terrorists. But historically they have not crossed the threshold and provided biological weapons materials to insurgency groups or terrorist organizations. State sponsors have a great incentive to control the activities of the groups they support, because they fear that retaliation may be directed against them if they are connected to a group that used biological weapons. Even if states sought to perpetrate biological attacks for their own purposes, they would probably not trust such an operation to groups or individuals that they do not completely control.

Some argue that Saddam Hussein's Iraq is the type of state that might cross this threshold.[3] In the case of Iraq, the leadership would probably make the decision to undertake such a risky operation. In most countries in an adversary relationship with the U.S. what is more likely than a conscious decision by a country's command authority is that an unauthorized faction within a state might take it upon itself to use a sub-national group to do its dirty work. The alleged involvement of the Iranian government security services in the attack on American military personnel in Khobar Towers seems to be an example of this type of involvement. Thus, while the probability of states using sub-national groups or individuals to perpetrate a biological warfare attack on its behalf seems low, it is not zero.

Meetings between some of the September 11th terrorists and Iraqi intelligence

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[3] Laurie Myroie, *Study of Revenge: Saddam Hussein's Unfinished War against America*, (Washington, DC: The AEI Press), 2000. See also Laurie Myroie, "The Iraqi Connection", *The Wall Street Journal*, September 13, 2001, p. A20. For an alternative view of Iraqi involvement in the 1993 bombing see John Parachini, "The World Trade Center Bombers (1993)," in Jonathan B. Tucker, ed., *Terror: Assessing Terrorist Use of Chemical and Biological Weapons*, (Cambridge, Massachusetts: MIT Press, 2000).

operatives raise the questions whether Iraq or a faction within the Iraqi intelligence service is involved. Thus far, there is no publicly available evidence linking Iraq to the September 11th terrorists or linking the September 11th terrorists to the anthrax attacks. However, the contact between the Iraqis and the terrorists is suspicious. Ongoing U.S. enforcement of no-fly zones in northern and southern Iraq may cause Saddam Hussein to view his state in perpetual war with America. Given the dictatorial fashion in which Hussein rules the country, it is hard to imagine a rogue element within the Iraqi government acting without his knowledge and approval. Furthermore, the enforcement of the no-fly zones does not present an imminent challenge to the survival of the Iraqi regime. Thus, until new evidence becomes available, the contacts and the timing of the anthrax attacks remain suspicious, but provide no smoking gun.

SUB-NATIONAL ENTITY PERPETRATES BIOTERRORISM

Sub-national groups or individuals can develop or acquire their own biological weapons capabilities for clandestine use, but it is not easy. Terrorist groups and individuals historically have not employed biological weapons because of a combination of formidable barriers to acquisition and use and comparatively readily available alternatives and disincentives. Procurement of materials and recruitment of people with skills and know-how are formidable barriers. Even if some of the materials and production equipment are procurable for legitimate scientific or industrial purposes, handling virulent biological materials and fashioning them into weapons capable of producing mass casualties is beyond the reach of most sub-national groups or individuals.

In the last twenty years, there are only two significant cases of sub-national groups using or attempting to use biological weapons and a few cases where groups or individuals made efforts to acquire biological materials. In 1984, the Rajneeshees, a religious cult group located in Oregon, sought to win a local election by running its own candidates and intentionally poisoning local townspeople who they expected would vote

against them.[4] Using their medical clinics, cult members ordered a variety of bacterial cultures from the American Type Culture Collection located in Maryland. They contaminated ten salad bars with a strain of salmonella, sickening at least 751 people. They used commercially available biological agents to incapacitate people clandestinely, because it was important for them to avoid attracting attention. The intentional character of the outbreak was not recognized for over a year, when members of the cult revealed details about the attacks to authorities in exchange for lighter sentences stemming from other charges.

The other case occurred more than ten years later, when another religious cult, a Japanese group called the Aum Shinrikyo, sought to develop and deliver biological agents against a number of targets. The Aum's unsuccessful attempts at biological terrorism came to light after it released liquid sarin on the Tokyo subway.

The cult's leader Shoko Asahara wrote songs about sarin. In addition to this pernicious obsession, Aum leaders had delusions of grandeur that far exceeded reality. They imagined a world they sought to create that was not constrained by the world in which they lived. To bring this imaginary world into being, they sought weapons they believed might trigger an apocalypse from which they would emerge as a dominant power. Aum leaders may have deluded themselves into thinking that their organization was a government and military-in-waiting, and hence, seeking to acquire weapons it believed states possessed seemed legitimate. Instead of seeking lower-grade pathogens, Aum sought pathogens that are generally associated with military biological weapons programs. Aum exhibited this unique combination of obsession, delusions of grandeur, and belief in an apocalypse they could launch that would enable them to reign like leaders of a state.

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[4] W. Seth Carus, "The Rajneeshees (1984)," pp. 115-137, in Jonathan B. Tucker, ed., *Toxic Terror: Assessing Terrorist Use of Chemical and Biological Weapons*, (Cambridge, Massachusetts: MIT Press, 2000). See also, Judith Miller, Stephen Engelberg, William Broad, *Germs: Biological Weapons and America's Secret War*, (New York, NY: Simon & Shuster), pp. 15-33.

In the years since the attack, fears that the Aum attempt to acquire and use biological weapons heralded a new age in such terrorism have been a constant refrain. Yet so much about the Aum is so unique that it is hard to imagine it ever being repeated. Japanese law enforcement authorities tend to make arrests only when they have an ironclad case against the perpetrator of a crime. There were several incidents prior to the March 1995 sarin attack on the Tokyo subway that in retrospect should have raised suspicion. Additionally, Japanese legal provisions protecting religious organizations from intense government scrutiny inhibited authorities from intervening until long after the group committed a number of heinous acts. The Aum leadership presents another anomaly. Shoko Asahara, Aum's leader, was a controlling leader with an obsession with poisons. He wrote songs in praise of sarin. He also greatly admired another mass poisoner, Adolph Hitler. The leadership mindset of Aum explains a great deal about the group's use of unconventional weapons. They were fascinated by the means to catalyzing an apocalypse more than they were fascinated by killing large numbers of people. In contrast, Timothy McVeigh, Ramzi Yousef, and Mohammed Atta were determined to kill large numbers of people and the means to do so was merely instrumental.

Two aspects of the Aum biological weapons experience deserve special note when considering the threat of biological terrorism. Aum's global effort to procure biological materials for its nefarious purposes deserves much greater examination. While there is no open source information indicating that the Aum obtained any radiological, biological, or chemical materials in Russia, it certainly tried. That the group tried and succeeded in getting meetings with Russian scientists, some of whom had weapons expertise, is troubling.

Aum members also traveled to Zaire believing they could obtain samples of the Ebola virus. There is no evidence to indicate that they were successful in their venture. What may have inspired their trip was a newspaper account of a Japanese tourist who developed a hemorrhagic fever after returning from a game safari in Africa. In fact,

during period when Aum members traveled to Zaire there were no reported outbreaks of Ebola. Aum was trying to obtain biological material from infected people or corpses for weapons purposes. This highlights a very different source of material than the weapons laboratories of the former Soviet Union. It is probably easier to monitor scientific institutes that were once or are currently affiliated with weapons programs than it is to monitor the sites of deadly disease outbreaks that occur around the globe. Some thought and attention needs to be given to how natural disease outbreaks might be exploited for pernicious purposes.

BIOTERRORISM IN CONTEXT

While recent reports do suggest that we need to adjust our perspective of the bioterrorism threat, we should not lose sight of the scope and magnitude of the tragic events on September 11th and a number of other mass casualty terrorist attacks in the 1990s that involved conventional explosives, not nuclear, biological or chemical weapons. Amidst the evolving bioterrorism threat it is difficult to keep perspective on the relative dangers different terrorist attacks pose. Critical to our thwarting the designs of the perpetrator of the anthrax attacks and succeeding in the campaign of civilized society against barbarism is putting dangers into perspective and calibrating our actions accordingly.

In these uncertain times, it is important to maintain some perspective of the relative dangers. Despite the recent anthrax attacks, the history of biological warfare, terrorism, and crime is still much less deadly than that of the history with conventional explosives. While history is not a perfect guide to the future, it does provide a context for our thinking.

Since the future is impossible to see clearly, we must anticipate a number of possible scenarios. We need to take account of history and hedge against imponderables of the future. Although the prospects of a major biological terrorist attack are remote,

small-scale biological attacks are much more likely. In this light, the challenge before the government is how to put relative dangers in proper perspective and yet still hedge against future eventualities that are unlikely, but possible.

WHY HAS BW USE BEEN SO INFREQUENT?

The use of disease and biological material as a weapon is not a new method of warfare. What is surprising is how infrequently it is has been used. Biological agents may appeal to the new terrorist groups because they affect people indiscriminately and unnoticed, thereby sowing panic. A pattern is emerging that terrorists who perpetrate mass and indiscriminate attacks do not claim responsibility.[5] In contrast to the turgid manifestos issued by terrorists in the 1960s, 1970s and 1980s, recent mass casualty terrorists have not claimed responsibility until they were imprisoned. Biological agents enable terrorists to preserve their anonymity because of their delayed impact and can be confused with natural disease outbreaks. Instead of the immediate gratification of seeing an explosion or the glory of claiming credit for disrupting society, the biological weapons terrorist may derive satisfaction from seeing society's panicked response to their actions. If this is the case, this is a new motive for the mass casualty terrorist.

There are a number of countervailing disincentives for states and terrorists to use biological weapons, which help explain why their use is so infrequent. The technical and operational challenges biological weapons pose are considerable. Acquiring the material, skills of production, knowledge of weaponization, and successfully delivering the weapon, to the target is difficult. In cases where the populations of the terrorist supporters and adversaries are mixed, biological weapons risk inadvertently hitting the same people for whom terrorists claim to fight. Terrorists may also hesitate in using biological weapons specifically because breaking the taboo on their use may evoke considerable retaliation. The use of disease as a weapon is widely recognized in most

[5] Bruce Hoffman, "Why Terrorists Don't Claim Credit," *Terrorism and Political Violence*, Vol. 9, 1 (Spring 1997), pp. 1-6.

cultures as a means of killing that is beyond the bounds of a civilized society.

From a psychological perspective, terrorists may be drawn to explosives as arsonists are drawn to fire. The immediate gratification of explosives and the thrill of the blast may meet a psychological need of terrorists that the delayed effects of biological weapons do not. Causing slow death of others may not offer the same psychic thrill achieved by killing with firearms or explosives.

Perhaps the greatest alternative to using biological weapons is that terrorists can inflict (and have inflicted) many more fatalities and casualties with conventional explosives than with unconventional weapons. Biological weapons present technical and operational challenges that determined killers may not have the patience to overcome or they may simply concentrate their efforts on more readily available alternatives.

Putting aside the spectacular quality of the Aum subway attack with liquid sarin, far fewer people died or were injured than in similarly spectacular attacks with explosives. In comparison to the bombings of the Murrah federal building in Oklahoma City, the Khobar Towers military barracks in Saudi Arabia, and the U.S. embassies in Kenya and Tanzania, fewer people died as a result of the sarin release. In comparison with the recent attacks on the World Trade Center and the Pentagon, the Tokyo subway incident, though clearly tragic, was simply an event of much smaller scale.

But even if the possibility of a catastrophic biological weapons attack is remote, government has a responsibility to do all that it can to prevent, protect against, and respond to events that seem unlikely. The challenge is to determine how much to prepare for a low-probability, albeit potentially catastrophic attack, while at the same time, guarding against not focusing enough on more probable events with significant, but not necessarily catastrophic, consequences.

NONPROLIFERATION MEASURES TO ADDRESS BIOLOGICAL TERRORISM

The recent anthrax attacks highlight a number of improvements the United States needs to undertake in order to better protect its citizenry against bioterrorism. The positive side of these frightening attacks is that they are forcing an upgrade of our capabilities to handle bioterrorism. I will focus most of my remarks on some long-term preventive tools. In the fight against bioterrorism, a full set of tools will be needed because there are no silver bullet solutions to the threat. The tools I discuss below complement others in the fields of intelligence, law enforcement, counter-proliferation, medical diagnostics and forensics, and disease surveillance, to name just a few.

Preventive nonproliferation measures can form the basis for a frontline of defense against attacks with biological weapons. After attack response is important because it can help limit the loss of life, destruction of property and political implications of an attack. However, after attack measures are not a substitute for preventive and preemptive measures. Completely eliminating the possibility of an attack with unconventional weapons is probably not possible, but reducing the opportunity for states and sub-national groups to acquired unconventional weapons is possible.

The United States rejected the text resulting from several years of negotiations toward a draft protocol to the Biological Weapons Convention (BWC) as unsatisfactory for the task: preventing the proliferation of biological weapons.[6] The challenge for the Bush administration is to reinforce the normative prohibition against biological inscribed in the BWC and at the same time propose measures that genuinely strike at the long-term problem of biological weapons proliferation to states and sub-national entities.

States trying to strengthen the BWC will meet this month, and the Bush administration will need to describe measures that the international community should

[6] Statement by Ambassador Donald Mahley to the Ad Hoc Group of Biological Weapons Convention State Parties, July 25, 2001.

consider to counter the biological weapons proliferation problem. Given the events in the United States, the timing of a constructive international discussion could not be better.

There are three tools the international community should consider that address the problem of biological weapons that could form the basis for a new international approach to biological weapons proliferation. One portion of the rejected draft protocol that warrants consideration outside the context of the negotiations is the guidance on investigations of unusual outbreaks of disease.[7] Early detection of unusual outbreaks of disease, rapid communication of a diagnosis, communication of the diagnosis to public health authorities and delivery of appropriate antibiotics, can save many lives and turn a potentially large outbreak into a manageable incident.[8]

These investigations do not necessarily require a new international agency like a Biological Weapons Convention Organization (BWCO). The Conventional Forces in Europe (CFE) treaty provides one example of how a grouping of states could investigate agreed upon problems such as suspicious outbreaks. The findings of experts from regional groupings of states could be reported to the UN Security Council, the World Health Organization, an existing multilateral security organization in the region of the outbreak, and the individual states in the region of the outbreak.

Another option is described in a UN General Assembly mandate providing the UN Secretary General with powers to investigate alleged use of chemical and biological weapons. This provision permits the UN Secretary General to dispatch a group of qualified experts to conduct an investigation and report back to the General Secretariat or the UN Security Council. This model was outlined in the UN General Assembly under its resolution 42/37C in November 1988.[9] In October 1989 a group of experts provided a

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[7] Michael Moodie, "The BWC Protocol: A Critique," *CBACI Special Report 1*, June 2001, pp. 28-29.
[8] Jonathan B. Tucker, Testimony before the Subcommittee on Labor, Health and Human Services, Education, and Relation Agencies of the U.S. Senate Committee on Appropriations, Improving Infections Disease Surveillance to Combat Bioterrorism and Natural Emerging Infections, October 3, 2001, (http://www.cns.miis.edu/research/cbw/testtuck.htm) (Viewed on October 9, 2001).
[9] Draft Report of the World Health Organization on Chemical and Biological Weapons.

report on how investigations of alleged use might be conducted. Even if these investigations do not discover clandestine weapons programs, they will make a contribution to international public health. Enhanced monitoring of global disease outbreaks provides both a public health benefit and a security benefit. Thus, for every dollar or yen invested, there is a clear public health benefit and a potential security benefit.

A new global effort must be made to stop the proliferation of dangerous pathogens to irresponsible states, organization and individuals. There are almost 100 culture collections in the United States and more than 450 collections around the world. The U.S. improved its system in 1995 after an individual with ties to anti-government groups fraudulently sought disease cultures from a culture collection, but it still may require further improvements.[10] A national baseline of where dangerous pathogens are currently located needs to be established. Additionally, a national registry should be established that lists all the scientists who are working with such pathogens. It is frightening to note what little regulation other countries have governing the transfer, storage, and use of dangerous pathogens.

The international community must strive to strike a balance between pathogen commerce for legitimate commercial and scientific purposes and preventing the transfer of deadly materials to people who will use them as weapons. The combination of national export controls and the Australia Group coordination is simply not sufficient for regulating commerce in pathogen samples. Many countries with culture collection do not participate in the Australia Group. Similarly, national laws governing exports of biological materials vary tremendous from country to country, and not all of them meet model international standards. New standards that are more universal in character and more appropriate to the commodity in question are needed.

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[10] Jessica Eve Stern, "Larry Wayne Harris," in Jonathan B. Tucker (ed.), *Toxic Terror: Assessing Terrorist Use of Chemical and Biological Weapons*, (Cambridge, Massachusetts: MIT Press, 2000)

Finally, the current international legal regime system is inadequate for the current crisis in part because it focuses on the activities of states and not sub-national groups. While the Chemical Weapons Convention (CWC) does require each state party to pass and to implement national legislation penalizing individuals and companies that violate the provisions that apply to the state, many countries remain in technical violation of this requirement. Less than half of the CWC state parties have drafted implementing legislation, which is a troubling example of technical non-compliance.[11] Additionally, among the countries that have enacted legislation, the issue of penal legislation has been inadequately addressed. The international community must urge CWC state parties to pass the required domestic legislation. This is one of those small, but important aspects of treaty implementation that the international community has not adequately addressed in an era when there is more attention paid to negotiations.

The Harvard Sussex Program on CBW Armament and Arms Limitation has proposed an international accord criminalizing possession, transfer and use of chemical and biological weapons by individuals. In essence, this draft convention provides the international legal framework to prosecute anyone, from the terrorist to the head of state, who uses chemical or biological weapons. The initiative seeks to fill a gap in existing international legal framework.

As the international community considers this valuable stopgap measure it also needs to consider how to ensure effective implementation. National governments need to provide adequate financial and law enforcement resources to make this convention meaningful. More treaties need to be complemented by the law enforcement capabilities sufficient to apprehend chemical and biological weapons terrorists and the political will to prosecute them to the fullest extent. Far too often the international community and national government bless unfunded mandates and expect results.

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[11] Barry Kellman, "National Legislation to Implement Legal Assistance and Cooperation, International Symposium: Cooperation and Legal Assistance for the Effective Implementation of International Agreements, The Hague, Netherlands, February, 2001. See also, Barry Kellman, "WMD Proliferation: An International Crime? *The Nonproliferation Review*, vol. 8, no. 2, Summer 2001.

CONCLUSION

The recent anthrax attacks represent a fundamental shift in the nature of the biological terrorism threat. Fortunately, the scope and magnitude of this shift is far less devastating than the events of September 11th. As we face this new phase of biological weapons terrorism, it is important to maintain perspective even though the ability of the perpetrator of the anthrax attacks to terrorize the country is distressing. Fortunately, there have been comparatively few casualties. These attacks should serve to spur government action on a number of fronts to strengthen our national ability to prevent the proliferation of biological weapons, deny and dissuade states and sub-national groups from using them, and develop rapid means to detect an attack and track down the perpetrator should preemptive and preventive measures fail.